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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Seth A. Darst et al.

Application No.: 10/783,206

Filed: February 20, 2004

For: CRYSTAL OF BACTERIAL CORE RNA POLYMERASE WITH RIFAMPICIN AND METHODS OF USE THEREOF

Examiner: Not yet known

Art Unit: 1625

Attorney Docket No.: IPT-012.02

CERTIFICATE OF MAILING

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INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97 (b)(3)

Sir:

In compliance with the requirements of 37 C.F.R. 1.56 and 1.97(b)(3), submitted herewith on Form PTO-1449 is a list of publications known to Applicants and/or their Attorney/Agent. Under 35 U.S.C. § 120, the above-identified application has the benefit of an earlier filing date of the following application: U.S. Serial No. 09/802,755 filed on March 9, 2001. Copies of the documents (References C1-C82) identified in the Form PTO-1449 are not provided because they were previously cited by or submitted to the Patent Office in the prior patent application; therefore, they are not required to be provided in this application. However, Applicants will gladly furnish copies of some or all of same upon request.

Applicants respectfully request that the Examiner consider the listed publications and indicate they were considered by making appropriate notations on the attached Form 1449.

This submission does not represent that a search has been made or that no better art exists. Nor does it constitute an admission that the cited documents are material or constitute "prior art." If the Examiner applies the listed documents as prior art against any claim in the application and Applicant determines that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents. Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the referenced documents be applied against the claims of the present application.

Applicants have listed dates of publication on the attached PTO-1449 for the cited documents based on information presently available to the undersigned. However, the listed publication dates should not be construed that the information in the cited documents was actually published or otherwise publicly available on the date indicated.

Under 37 C.F.R. § 1.97 (b)(3), this Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits; therefore, no fee is believed to be due in connection with this submission. However, the Commissioner is authorized to charge any deficiencies or credit any overpayment to/from our **Deposit Account, No. 06-1448, Reference IPT-012.02.**

Respectfully Submitted,

Date: May 24, 2005

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 11

Complete if Known	
Application Number	10/783,206
Filing Date	February 20, 2004
First Named Inventor	Seth A. Darst et al.
Art Unit	1625
Examiner Name	Not yet known
Attorney Docket Number	IPT-012.02

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No.[1]	Document Number Number - Kind Code[2] (*if known*)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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Sheet 2 of 11

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	C1	Adams et al., Cross-validated Maximum Likelihood Enhances Crystallographic Simulated Annealing Refinement, *Proc. Natl. Acad. Sci. USA* **94**:5018-5023 (1997)	
	C2	Allison et. al., Extensive Homology among the Largest Subunits of Ekaryotic and Prokaryotic RNA Polymerases, Cell Vol. 42:599-610 (1985)	
	C3	Archambault et al., Genetics of Eukaryotic RNA Polymerases I, II, and III, *Microbiol. Rev.* 57(3):703-724 (1993)	
	C4	Arora , Correlation of Structure and Activity in Ansamycins Molecular Structure of Sodium Rifamycin SV, *Molecular Pharmacology*, 23, 133-140 (1983)	
	C5	Borukhov et al., Mapping of Trypsin Cleavage and Antibody-binding Sites and Delineation of a Dispensable Domain in the β Subunit of Escherichia coli RNA Polymerase, *J. Biol. Chem.* 266:23921-23926 (1991)	
	C6	Brufani et. al., Rifamycins: an Insight into Biological Activity Based on Structural Investigations, *J. Mol. Biol.*, 87, 409-435 (1974)	
	C7	Campbell et al., " Structural Mechanism for Rifampicin Inhibition of Bacterial RNA Polymerase ", Cell 104: 901-912, (March 23, 2001)	
	C8	Carson, J., Ribbons 2.0, *Appl. Crystallogr.* 24:958-961 (1991)	
	C9	Chamberlin, "New Models for the Mechanism of Transcription Elongation and its Regulation," The Harvey Lectures, 88:1-21 (1993)	
	C10	Cheetham et al., Structural Basis for Initiation of Transcription from an RNA Polymerase-Promoter Complex, *Nature* 399:80-83 (1999)	
	C11	Cohen et al., " Molecular Modeling Software and Methods for Medicinal Chemistry", Journal of Medicinal Chemistry , 33(3): 883-894, (March 1990)	
	C12	Conaway and Conaway, An RNA Polymerase II Transcription Factor Shares Functional Properties with Escherichia coli σ70, *Science* 248:1550-1553 (1990)	
	C13	Darst et al. , Three-Dimensional Structure of Escherichia coli RNA Polymerase Holoenzyme Determined by Electron Crystallography, *Nature* 340:730-732 (1989)	

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	C14	Darst et al., Three-Dimensional Structure of Yeast RNA Polymerase II at 16 A Resolution, *Cell* 66:121-128 (1991)	
	C15	Darst et al., Insights into Escherichia coli RNA Polymerase Structure from a Combination of X-Ray and Electron Crystallography, *J. Structural Biol.* 124:115-122 (1998)	
	C16	Darst et al. , Structural Studies of Escherichia coli RNA Polymerase, *Cold Spring Harbor Symp. Quant. Biol.* 63:269-276 (1998)	
	C17	Darst, et. al., Two-dimensional Crystals of Escheria Coli RNA Polymerase Holoenzyme on Positively Charged Lipid Layers, *J. Mol. Biol*, 70:269-673 (1988)	
	C18	Degryse et al., A Comparative Analysis of Extreme Thermophilic Bacteria Belonging to the Genus Thermus, *Arch. Microbiol.* 117:189-196 (1978)	
	C19	Doublie, Preparation of Selenomethionyl Proteins for Phase Determination, *Methods Enzymol.* 276:523-530 (1997	
	C20	Drenth, Jan, "Principles of Protein X-ray Crystallography," 1995, Springer-Verlag, p.16.	
	C21	Erie et al., The Single-Nucleotide Addition Cycle in Transcription: A Biophysical and Biochemical Perspective, *Ann. Rev. of Biophysics & Biomol. Structure* 21:379-415 (1992	
	C22	Furey and Swaminathan , Phases 95: A Program Package for Processing and Analyzing Diffraction Data from Macromolecules, *Methods Enzymol.* 277:590-621 (1997	
	C23	Gentry and Burgess, Cross-Linking of Escherichia coli RNA Polymerase Subunits: Identification of β' as the Binding Site of ω, *Biochem.* 32:11224-11227 (1993)	
	C24	Gnatt et al., Formation and Crystallization of Yeast RNA Polymerase II Elongation Complexes, *J. Biol. Chem.* 272:30799-30805 (1997)	
	C25	Gross et al., A Structure/Function Analysis of Escherichia coli RNA Polymerase, *Philosophical Transcations of the Royal Society of London - Series B: Biological Sciences* 351:475-482 (1996)	
	C26	Heil, et al., Reconstitution of Bacterial DNA-Dependent RNA-Polymerase from Isolated Subunits as a Tool for the Elucidation of the Role of The Subunits in Transcription, *FEBS Letter, Vol. 11, p. 165-168.* (1970)	

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Sheet 4 of 11

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	C27	Helmann and Chamberlain, Structure and Function of Bacterial Sigma Factors, *Ann. Rev. of Biochem.* 57:839-872 (1988)	
	C28	Heyduk et al., Determinants of RNA Polymerase α Subunit for Interaction with β, β', and σ Ubunits: Hydroxyl-Radical Protein Footprinting, *Proc. Natl. Acad. Sci. USA* 93:10162-10166 (1996)	
	C29	Hinkle et. al., Studies Binding of Escherichia coli RNA Polymerase to DNA, *J. Mol. Biol.*, 70 pp 209-220 (1972	
	C30	Jin and Gross, Mapping and Sequencing of Mutations in the Escherichia coli rpoB Gene that Lead to Rifampicin Resistance, *J. Molec. Biol.* 202:45-58 (1988)	
	C31	Jin, et. al., Characterization of the Pleitropic Phenotypes of Rifampin-Resistant rpoB Mutants of Escherichia coli, *Journal of Bacteriology*, Sept. 5229-5231 (1989)	
	C32	Jin, et. al., RpoB8, a Rifamipicin-resistant Termination-proficient RNA Polymerase Has an Increased Km for Purine Nucleotides during Transcription Elongation, *The Journal of Biological Chemistry*, Vol. 266, No. 22, pp 14478-14485	
	C33	Jokerst et al. (1989), Analysis of the Gene Encoding the Largest Subunit of RNA Polymerase II in Drosophila, *Mol. Gen. Genet.* 215:266-275 (1991)	
	C34	Jones et al., Improved Methods for Building Protein Models in Electron Density Maps and the Location of Errors in These Models, *Acta Cryst* A47:110-119 (1991),	
	C35	Koulich, D. et al., Domain Organization of Escherichia coli Transcript Cleavage Factors GreA and GreB, *J. Biol. Chem.*272(11):7201-7210 (1996)	
	C36	Landick et. al., Amino Acid changes in conserved regions of the β-sumbit of Escherichia coli RNA polymerase alter transcription pausing and termination, *Genes & Development*, 1623-1636 (1990)	
	C37	Loizos, N. et al., Mapping Interactions of Escherichia coli GreB with RNA Polymerase and Ternary Elongation Complexes, *J. Biol. Chem.* 274(33):23378-23386 (1999)	
	C38	Markovtsov et al., Protein-RNA Interactions in the Active Center of Transcription Elongation Complex, *Proc. Natl. Acad. Sci. USA* 93:3221-3226 (1996)	
	C39	McClure, et. al., On the Mechanism of Rifampicin Inhibition of RNA Synthesis, *The Journal of Biological Chemistry*, Vol 253(24):8949-8956 (1978)	

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Sheet 5 of 11

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	C40	Mecsas et al. , Development of RNA Polymerase-Promoter Contacts During Open Complex Formation, *J. Mol. Biol.* 220:585-597 (1991)	
	C41	Metzger et al., A Cinematographic View of Escherichia coli RNA Polymerase Translocation, *Embo. J.* 8:2745-2754 (1989)	
	C42	Minakhin, L. et al., Bacterial RNA Polymerase Subunit ω and Eukaryotic RNA Polymerase Subunit RPB6 are Sequence, Structural, and Functional Homologs and Promote RNA Polymerase Assembly, *Proc. Natl. Acad. Sci. USA* 98(3):892-897 (2001)	
	C43	Mooney, et. al., RNA Polymerase Unveiled, Cell, 98:687-690 (1999)	
	C44	Morse, et. al., Isolation of Rifampin-Resistant Mutants of Listeria monocytogenes and Their Characterization of rpoB Gene Sequencing, Temperature Sensitivity for Growth, and Interaction with an Epithelial Cell Line, *Journal of Clinical Microbiology*, Sept., 2913-2919 (1999)	
	C45	Mukherjee and Chatterji, Studies on the ω Subunit of Escherichia coli RNA Polymerase Its Role in the Recovery of Denatured Enzyme Activity, *Eur. J. Biochem.* 247:884-889 (1997)	
	C46	Mustaev et al., Mapping of the Priming Substrate Contacts in the Active Center of Escherichia coli RNA Polymerase, *J. Biol. Chem.* 266:23927-23931 (1991)	
	C47	Mustaev et al., Topology of the RNA Polymerase Active Center Probed by Chimeric Refampicin-Nucleotide Compounds, *Proc. Natl. Acad. Sci. USA* 91:12036-12040 (1994)	
	C48	Mutsaev et al., Modular Organization of the Catalytic Center of RNA Polymerase, *Proc. Natl. Acad. Sci. USA* 94:6641-6645 (1997)	
	C49	Naryshkin et al.," Structural Organization of the RNA Polymerase-Promoter Open Complex", Cell 101: 601-611, (June 9, 2000)	
	C50	Naryshkina, T. et al., The β' Subunit of Escherichia coli RNA Polymerase is not Required for Interaction with Initiating Nucleotide but is Necessary for Interaction with Rifampicin, *J. Biol. Chem.* 276(16):13308-13313 (2001)	
	C51	Nicholls et al., Protein Folding and Association: Insights From the Interfacial and Thermodynamic Properties of Hydrocarbons, *Proteins Structure, Function and Genetics* 11:281-296 (1991)	
	C52	Nolte, Rifampicin resistance in Neisseria meningitidis; evidence from a study of sibling strains, description of new mutations and notes on population genetics, *Journal of Antimicrobial Chemotherapy*, 39:747-755 (1997)	
	C53	Nudler , Transcription Elongation: Structural Basis and Mechanisms, *J. Mol. Biol.* 288:1-12 (1999)	

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	C54	Nudler et al., Transcription Processivity: Protein-DNA Interactions Holding Together the Elongation Complex, *Science* 273:211-217 (1996)	
	C55	Nudler et al., The RNA-DNA Hybrid Maintains the Register of Transcription by Preventing Backtracking of RNA Polymerase, *Cell* 89:33-41 (1997)	
	C56	Nudler et al., Spatial Organization of Transcription Elongation Complex in Escherichia coli, *Science* 281:424-428 (1998)	
	C57	Opalka, N., Direct Localization of a β-Subunit Domain on the Three-Dimensional Structure of Escherichia coli RNA Polymerase, *PNAS* 97(2):617-622 (2000)	
	C58	Otwinowski, Maximum Likelihood Refinement of Heavy Atom Parameters, *Isomorphous Replacement and Anomalous Scattering (Eds. Wolf, Evans and Leslie) Science and Engineering Research Council, Daresbury Laboratory, Daresbury, UK* pp. 80-86 (1991)	
	C59	Padayachee et. al., Molecular Basis of Rifampin Resistance in Streptococcus pneumoniae, *Antimicrobial Agents and Chemotherapy*, Oct, 2361-2365 (1999)	
	C60	Polyakov et al., Three-Dimensional Structure of E. coli Core RNA Polymerase: Promoter Binding and Elongation Conformations of the Enzyme, *Cell* 83:365-373 (1995)	
	C61	Rost and Sander, Prediction of Protein Secondary Structure at Better than 70% Accuracy, *J. Mol. Biol.* 232:584-599 (1993)	
	C62	Schickor, P. et al., Topography of Intermeditaes in Transcription Initiation of E. coli, *EMBO J.* 9(7):2215-2220 (1990)	
	C63	Schultz et al., Three-Dimensional Model of Yeast RNA Polymerase I Determined by Electron Microscopy of Two-Dimensional Crystals, *EMBO. J.* 12:2601-2607 (1993)	
	C64	Sentenac et al., "Yeast RNA Polymerase Subunits and Genes, *Transcriptional Regulation (eds. McKnight, S.L. and Yamamoto, K.R.) in Cold Spring Harbor Laboratory, Cold Spring Harbor* 27-54 (1992)	
	C65	Severinov et al., Dissection of the β Subunit in the Escherichia coli RNA Polymerase into Domains by Proteolytic Cleavage, *J. Biol. Chem.* 267:12813-12819. (1992)	

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	C66	Severinov et al., Rifampicin Region Revisted, *J. Biol. Chem.* 268(20):14820-14825 (1993)	
	C67	Severinov et al., RifR Mutations in the Beginning of the Escherichia coli rpoB Gene, *Molec. Gen. Genet.* 244:120-126 (1994)	
	C68	Severinov, et al., Assembly of Functional Escherichia coli RNA Polymerase Containing β Subunit Fragments, *Proc. Natl. Acad. Sci. USA* 92:4591-4595 (1995)	
	C69	Severinov, et al., Streptolydigin-Resistant Mutants in an Evolutionarily Conserved Region of the β' Subunit of Escherichia coli RNA Polymerase, *J. Biol. Chem.* 270:23926-23929 (1995)	
	C70	Severinov et al., The β Subunit Rif-Cluster I is Only Angstroms Away from the Active Center of Escherichia coli RNA Polymerase, *J. Biol. Chem.* 270:29428-29432 (1995)	
	C71	Severinov, K. et al., Structural Modules of the Large Subunits of RNA Polymerase, *J. Biol. Chem.* 271:27969-27974 (1996)	
	C72	Severinov, K. et al., Tethering of the Large Subunits of Escherichia coli RNA Polymerase, *J. Biol. Chem.* 272(39):24137-24140 (1997)	
	C73	Sweetser et al., Prokaryotic and Eukaryotic RNA Polymerases have Homologous Core Subunits, *Proc. Natl. Acad. Sci. USA* 84:1192-1196 (1987	
	C74	Von Hippel et al., Protein-Nuclic Acid Interactions in Transcription: A Molecular Analysis, *Ann. Rev. of Biochem.* 53:389-446 (1984)	
	C75	Wang et al., Determinants for Escherichia coli RNA Polymerase Assembly within the β Subunit, *J. Mol. Biol.* 270:648-662 (1997)	
	C76	Wichelhaus, et. al., Molecular Characterization f rpoB Mutations Conferring Cross-Resistance to Rifamycins on Methicillin-Resistant Staphylococcus aureus, *Antimicrobial Agents and Chemotherapy,* Nov. 2813-2816 (1999)	
	C77	Zakharova et al., Fused and Overlapping rpoB and rpoC Genes in Helicobacters, Cambylobacters, and Related Bacteria, *J. Bacteriol.* 181: 3857-3859 (1999)	

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Sheet 8 of 11

Complete if Known	
Application Number	10/783,206
Filing Date	02/20/04
First Named Inventor	Seth A. Darst et al.
Art Unit	1625
Examiner Name	Not yet known
Attorney Docket Number	IPT-012.02

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	C78	Zaychikov et al., Mapping of Catalytic Residues in the RNA Polymerase Active Center, *Science* 273:107-109 (1996)	
	C79	Zhang and Darst , Structure of the Escherichia coli RNA Polymerase α Subunit Amino-Terminal Domain, *Science* 281:262-266 (1998)	
	C80	Zhang et al.," Crystal Structure of Thermus Aquaticus Core RNA Polymerase at 3.3 A Resolution", Cell, 98: 811-824 (1999)	
	C81	International Search Report Completed on May 27, 2002 and mailed on July 18, 2002.	
	C82	News Focus, Science, November 1, 2002, V. 298, p. 948-950.	
	C83	Arora et al., "Correction of Structure and Activity in Ansamycins: Molecular Structure of Cyclized Rifamycin SV," J. Antibiot. 37:178-181 (1984)	
	C84	Arora, "Correlation of Structure and Activity in Ansamycins: Structure, Conformation, and Interactions of Antiobotic Rifamycin S," J. Med. Chem. 28:1099-1102 (1985)	
	C85	Arora, "Structural Investigations of Mode of Action of Drugs," Acta Cryst. B37:152-157 (1981)	
	C86	Bugg et al., "Drugs by Design," Scientific American, December, 92-98 (1993)	
	C87	Burgess, "A New Method for the Large Scale Purification of Escherichia coli Deoxyribonucleic Acid-dependent Ribonucleic Acid Polymerase," J. Biol. Mol, 244(22):6180-6167 (1969	
	C88	Chamberlin et al., "Deoxyribonucleic Acid-Directed Synthesis of Ribonucleic Acid by an Enzyme from Escherichia coli," Proc. Natl, Acad. Sci. USA, 48:81-94 (1962)	
	C89	Cramer et al., "Architecture of RNA Polymerase II and Implications for the Transcription Mechanism," Science 288:640-649 (2000)	

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Sheet 9 of 11

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Application Number	10/783,206
Filing Date	02/20/04
First Named Inventor	Seth A. Darst et al.
Art Unit	1625
Examiner Name	Not yet known
Attorney Docket Number	IPT-012.02

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	C90	Dunbrack et al., "Meeting review: the Second Meeting on the Critical Assessment of Techniques for Protein Structure Prediction (CASP2), Asilomar, California, December 13-16, 1996," Folding & Design, 2(2):R27-R42 (1997)	
	C91	Ezekiel and Hutchins, "Mutations affecting RNA Polymerase associated with Rifampicin Resistance in Escherichia coli," *Nature London* 220:276-277 (1968)	
	C92	Hartmann et al., "The specific inhibition of the DNA-directed RNA synthesis by rifamycin," *Biochem. Biophys. Acta.* 145:843-844 (1967)	
	C93	Heep et al., "Mutations in the Beginning of the rpoB Gene Can Induce Resistance to Rifamycins in both Helicobacter pylori and Mycobacterium tuberculosis," Antimicrob. Agents and Chemotherapy, 44(4):1075-1077 (2000)	
	C94	Honore et al., "Nucleotide sequence of the first cosmid from the Mycobacterium leprae genome project: structure and function of the Rif-Str regions," Molecular Microbiology, 7(2):207-214 (1993)	
	C95	Huang et al., "Enzymatic Synthesis of RNA," Biochem. Biophys. Research Communications, 3(6):689-694 (1960)	
	C96	Hurwitz et al., "The Enzymic Incorporation of Ribonucleotides into Polyribonucleotides and the Effect of DNA," Biochem. Biophys. Research Communications, 3(1):15-19 (1960)	
	C97	Korzheva et al., "A Structural Model of Transcription Elongation," Science, 289:619-625 (2000)	
	C98	Korzheva et al., "Mechanistic Model of the Elongation Complex of Escherichia coli RNA Polymerase," Cold Spring Harbor Symposia on Quantitative Biology, 63:337-345 (1998)	
	C99	Lancini et al, "Structure-Activity Relationships in Rifamycins," In Structure-Activity Relationship in Semisynthetic Antibiotics (D. Perlaman ed.) 531-600 (1977)	
	C100	Levy, "The Challenge of Antibiotic Resistance," Scientific American, March, 46-53 (1998)	
	C101	Lisitsyn et al., *Bioorg. Khim* 10:127 (1984) (English Abstract)	

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Application Number	10/783,206
Filing Date	02/20/04
First Named Inventor	Seth A. Darst et al.
Art Unit	1625
Examiner Name	Not yet known
Attorney Docket Number	IPT-012.02

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	C102	Lisityn et al., "Mutation to rifampicin resistance at the beginning of the RNA polymerase β subunit gene in Escherichia coli," Mol. Gen. Genet., 196:173-174 (1984)	
	C103	Nudler et al., "Discontinuous Mechanism of Transcription Elongation," Science, 265:793-796 (1994)	
	C104	Ovchinnikov et al, "RNA Polymerase Rifampicin Resistance Mutations in Escherichia coli Sequence Changes and Dominance," Mol. Gen. Genet. 190:344-348 (1983)	
	C105	Ramaswamy et al., "Molecular genetic basis of antimicrobial agent resistance in Mycobacterium tuberculosis: 1998 update," Tubercle and Lung Disease, 79(1):3-29 (1998)	
	C106	Schulz et al., "Rifampicin inhibition of RNA synthesis by destabilisation of DNA-RNA polymerase-oligonucleotide-complexes," Nucleic Acids Research, 9(24):6889-6906 (1981)	
	C107	Sensi et al., "History of the Development of Rifampin," Reviews of Infectious Diseases, 5(3):S402-S406 (1983)	
	C108	Sensi et al., "Rifomycin I. Isolation and Properties of Rifomycin B and Rifomycin Complex," Antibiotics Annual 1959-1960, 262-270	
	C109	Severinova et al., "Inhibition of Escherchia coli RNA Polymerase by Bacteriophage T4 AsiA," J. Mol. Biol., 279:9-18 (1998)	
	C110	Shickor et al., "Topography of intermediates in transcription initiation of E. coli," The EMBO Journal, 9(7):2215-2220 (1990)	
	C111	Shinnick, Current Topics in Microbiol. Immunol. - Springer-Verlag Berlin Heidelberg, NY (1996)	
	C112	Stevens et al., "Incorporation of the Adenine Ribonucleotide into RNA by Cell Fractions from E. Coli B," Biochem. Biophys. Research Communications, 3(1):92-96 (1960)	
	C113	Wehrli et al, "Action of Rifamycin on RNA-Polymerase from Sensitive and Resistant Bacteria," Biochem. Biophys. Research Communications, 32(2):284-288 (1968)	

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	C114	Weiss et al., "A Mammalian System for the Incorporation of Cytidine Triphosphate into Ribonucleic Acid," J. Am. Chem. Soc., 81:4118-4119 (1959)	
	C115	Weiss et al., "Net Synthesis of Ribonucleic Acid with A Microbial Enzyme Requiring Deoxy-ribonucleic Acid and Four Ribonucleoside Triphosphates," J. Biol. Chem., 236(3):PC18-PC20 (1961)	
	C116	West et al., "Targeting HIV-1 protease: a test of drug-design methodologies," TIPS 16:67-75 (1995)	

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